



SFUND RECORDS CTR
1110-00349

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SFUND RECORDS CTR
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MEMORANDUM

TO: Nancy Riveland-Har
Remedial Project Manager
Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong *RF*
ESAT Project Officer
Quality Assurance (QA) Office, PMD-3

FROM: Doug Lindelof *SL for DL*
Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order No.: B01
Technical Direction No.: B0105086 Amendment 1

DATE: April 17, 2002

SUBJECT: Review of Analytical Data, Tier 3

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Omega Chem OU-2
SITE ACCOUNT NO.:	09 BC LA02
CERCLIS ID NO.:	CAD042245001
CASE NO.:	11-BCCO-15.0
SDG NO.:	01J254
LABORATORY:	EMAX Laboratories, Inc. (EMAX)
ANALYSIS:	Volatiles
SAMPLES:	5 Water Samples
COLLECTION DATE:	October 29, 2001
REVIEWER:	Denise McCaffrey, ESAT/LDC

The comments and qualifications presented in this report have been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

cc: ESAT File

SAMPLING ISSUES: ☒ Yes ☐ No

Data Validation Report

Case No.: 11-BCCO-15.0 SDG No.: 01J254
Site: Omega Chem OU-2
Laboratory: EMAX Laboratories, Inc.
Reviewer: Denise McCaffrey, ESAT/LDC
Date: April 17, 2002

I. Case Summary

SAMPLE INFORMATION:

Samples: GW401-PP063-0059, GW401-PP064-0061,
GW401-PP065-0069, GW401-PP066-0065, and
GW401-PP066-2002
Concentration and Matrix: Low Level Water
Analysis: Volatiles
SOW: SW-846 Method 8260B
Collection Date: October 29, 2001
Sample Receipt Date: October 30, 2001
Extraction Date: Not Applicable
Analysis Date: October 30 and 31, 2001

FIELD QC:

Trip Blanks (TB): GW401-PP066-2002
Field Blanks (FB): Not Provided
Equipment Blanks (EB): Not Provided
Background Samples (BG): Not Provided
Field Duplicates (DI): Not Provided

METHOD BLANKS AND ASSOCIATED SAMPLES:

MBLK1W: GW401-PP063-0059, GW401-PP064-0061DL,
GW401-PP065-0069DL, GW401-PP066-65,
GW401-PP066-0065DL, and GW401-PP066-2002
MBLK2W: GW401-PP064-0061, and GW401-PP065-0069

TABLES:

1A: Analytical Results with Qualifications
1B: Data Qualifier Definitions for Organic Data Review

DL - Dilution

SAMPLING ISSUES:

Detected results for chloroform and methylene chloride are qualified as nondetected and estimated (U,J) due to contamination in trip blank GW401-PP066-2002.

Matrix spike/matrix spike duplicate (MS/MSD) analysis was not performed because no MS/MSD sample was designated in this sample delivery group (SDG).

ADDITIONAL COMMENTS:

Dichlorofluoromethane was not analyzed. This compound is included in the REAP DQI Table.

The REAP DQI Table specified that four surrogate spikes (Toluene-d8, BFB, 1,2-dichloroethane-d4, and dibromofluoromethane) are required. Only three surrogate spikes (Toluene-d8, BFB, and 1,2-dichloroethane-d4) were used by the laboratory. The accuracy of the analytes were assessed based on the same grouping of surrogates and internal standards used by the laboratory.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Data Quality Indicator (DQI) Table for *Volatile Organic Compounds (VOCs)* by *SW-846 Method 8260*, Appendix B, Attachment 2, Section J, Contract No. 68-R9-00-11, Regional Environmental Analytical Procurement (REAP);
- EPA SW-846 Method 8260B, *Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)*, Revision 2, December 1996;
- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile and Semivolatile Data Packages*; and
- *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, October 1999.

II. Validation Summary

	Acceptable/Comment	
HOLDING TIMES	YES	
GC/MS TUNE/GC PERFORMANCE	YES	
INITIAL CALIBRATIONS	YES	
CONTINUING CALIBRATIONS	NO	C
LABORATORY BLANKS	NO	B
FIELD BLANKS	NO	B
SURROGATES	NO	D
LABORATORY CONTROL SAMPLE/DUPLICATE	YES	
INTERNAL STANDARDS	YES	
COMPOUND IDENTIFICATION	YES	
COMPOUND QUANTITATION	YES	A, E, F
SYSTEM PERFORMANCE	YES	
FIELD DUPLICATE SAMPLE ANALYSIS	N/A	

N/A = Not Applicable

III. Validity and Comments

- A. The following results, denoted with an “L” qualifier, are estimated and flagged “J” in Table 1A.

- All results below the contract required quantitation limits
Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

- B. The following results are qualified as nondetected and estimated due to method blank and trip blank contamination, and are flagged “U,J” in Table 1A.

- Methylene chloride in samples GW401-PP063-0059 and GW401-PP066-0065
- Chloroform and toluene in samples GW401-PP063-0059, GW401-PP064-0061, GW401-PP065-0069, and GW401-PP066-0065

Chloroform and methylene chloride were found in trip blank GW401-PP066-2002 at concentrations of 0.64 µg/L and 0.54 µg/L, respectively. Toluene was found in method blank MBLK2W and trip blank GW401-PP066-2002 at concentrations of 0.36 µg/L and 0.28 µg/L, respectively. Results for the samples listed above are considered nondetected and estimated (U,J) and the quantitation limits have been increased according to the blank qualification rules presented below.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank for the common laboratory contaminants or 5 times the amount for other compounds. If the sample result is greater than the CRQL, the quantitation limit is raised to the sample result (U,J). If the sample result is less than the CRQL, the result is reported as nondetected (U,J) at the CRQL.

A laboratory method blank is laboratory reagent water analyzed with all reagents, surrogates, and internal standards and carried through the same sample preparation and analytical procedures as the field samples. The laboratory method blank is used to determine the level of contamination introduced by the laboratory during preparation and analysis.

A trip blank is laboratory reagent water which is shipped from the laboratory to the field with the empty sample containers and back to the laboratory with the filled sample containers. A trip blank is intended to detect contaminants introduced during the transport of the samples to the laboratory, although any laboratory introduced contamination will be present. Contaminants that are found in the trip blank which are absent in the laboratory blank could be indicative of a problem in transportation, storage, the bottle preparation procedure, or other indeterminate error.

- C. Detected results and quantitation limits for the following analytes are qualified as estimated due to large percent differences (%Ds) in the continuing calibrations, and are flagged “J” in Table 1A.

- Acetone in samples GW401-PP064-0061 and GW401-PP065-0069 and method blank MBLK2W
- Hexachlorobutadiene in all samples and method blanks

A %D of 37.3% (biased high) was observed for acetone in the continuing calibration performed on October 31, 2001. %Ds of 33.5% and 34.3% (biased low) were observed for hexachlorobutadiene in the continuing calibrations performed on October 30, 2001 and October 31, 2001, respectively. These values exceed the $\pm 30.0\%$ validation criterion.

The continuing calibration checks the instrument's performance daily.

- D. Detected results and quantitation limits for the following analytes are qualified as estimated due to surrogate recovery outside QC limits, and are flagged "J" in Table 1A.

{1,2-Dichloroethane-d4}

- 1,1-Dichloroethane and cis-1,2-dichloroethene in samples GW401-PP065-0069 and GW401-PP066-0065
- 1,1-Dichloroethene, 1,2-dichloroethane, trans-1,2-dichloroethene, trichlorofluoromethane, and freon 113 in sample GW401-PP066-0065
- Chloroform in sample GW401-PP066-2002

Surrogate recoveries exceeded the QC limits are shown below for the samples listed above.

<u>Sample</u>	<u>Surrogate</u>	<u>% Recovery</u>	<u>QC Limits</u>
GW401-PP065-0069	1,2-Dichloroethane-d4	118	75-115
GW401-PP066-0065	1,2-Dichloroethane-d4	116	75-115
GW401-PP066-0065DL	1,2-Dichloroethane-d4	116	75-115
GW401-PP066-2002	1,2-Dichloroethane-d4	117	75-115

Detected results for affected analytes may be biased high. The samples were not re-analyzed.

Surrogates are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with surrogates prior to purging. Surrogates provide information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

- E. Samples GW401-PP065-0069 and GW401-PP066-0065 were analyzed at 10-fold dilutions due to the high level of target analytes. The CRQLs listed for these samples in Table 1A have been multiplied by the dilution factors.
- F. Sample GW401-PP064-0061 was analyzed at a 10-fold dilution due to the high level of tetrachloroethene. The result for tetrachloroethene is reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

Sample GW401-PP065-0069 was analyzed at a further dilution of 100-fold due to the high level of 1,1-dichloroethene. The result for 1,1-dichloroethene is reported from the 100-fold diluted sample in Table 1A; results for all other analytes are reported from the original analysis, performed at a 10-fold dilution.

Sample GW401-PP066-0065 was analyzed at a further dilution of 50-fold due to the high levels of 1,1-dichloroethene, cis-1,2-dichloroethene, trichloroethene, and tetrachloroethene. Results for 1,1-dichloroethene, cis-1,2-dichloroethene, trichloroethene, and tetrachloroethene are reported from the 50-fold diluted sample in Table 1A; results for all other analytes are reported from the original analysis, performed at a 10-fold dilution.

ANALYTICAL RESULTS

Tier3 Table 1A

Case No. : 11-BCCO-15.0

SDG No. : 01J254

Site : Omega Chem OU-2

Lab : EMAX

Reviewer : Denise McCaffrey, ESAT/LDC

Date : April 16, 2002

QUALIFIED DATA

Concentration in ug/L

Analysis Type : Water Samples for Volatiles by

EPA Method 8260B

Station Description :				Method Blank				Method Blank			
Sample ID :				MBLK1W				MBLK2W			
Collection Date :											
Dilution Factor :											
Volatil Compound				Result				Result			
Result				Val				Val			
Com				Com				Com			
1,1-Dichloroethane	1U			1U				29	J	DE	
1,1-Dichloroethene	1U			4.6				630	EF	DEF	
1,1-Dichloropropene	1U			1U				10U	E	E	
1,2,3-Trichloropropane	1U			1U				10U	E	E	
1,2,4-Trimethylbenzene	1U			1U				17	E	E	
1,2-Dibromo-3-chloropropane	2U			2U				20U	E	E	
1,2-Dichlorobenzene	1U			1U				10U	E	E	
1,2-Dichloroethane	0.5U			0.24L	J	A		5U	E	DE	
1,2-Dichloropropene	1U			1U				21	E	E	
1,2-Dibromoethane	1U			1U				10U	E	E	
1,3,5-Trimethylbenzene	1U			1U				3.4L	J	AE	
1,3-Dichlorobenzene	1U			1U				10U	E	E	
1,3-Dichloropropane	1U			1U				10U	E	E	
1,4-Dichlorobenzene	1U			1U				10U	E	E	
2,2-Dichloropropane	1U			1U				10U	E	E	
2-Chlorotoluene	1U			1U				10U	E	E	
Benzene	1U			1U				10U	E	E	
Bromobenzene	1U			1U				10U	E	E	
Bromochloromethane	1U			1U				10U	E	E	
Bromodichloromethane	1U			1U				10U	E	E	
Bromoform	1U			1U				10U	E	E	
Bromomethane	1U			1U				10U	E	E	
Carbon Tetrachloride	0.99			0.5U				5U	E	E	
Chlorobenzene	1U			1U				10U	E	E	
Chloroethane	1U			1U				10U	E	E	
Chloroform	1U	J	B	1U	J	B		10U	J	BE	
Chloromethane	1U			1U				10U	E	E	
cis-1,2-Dichloroethene	1U			3				44	J	DE	
Dibromomethane	1U			1U				10U	E	E	
Dichlorodifluoromethane	1U			1U				10U	E	E	
m/p-Xylenes	1U			1U				10U	E	E	
n-Butylbenzene	1U			1U				5.2L	J	AE	
o-Xylene	1U			1U				10U	E	E	
sec-Butylbenzene	1U			1U				4.2L	J	AE	
tert-Butylbenzene	1U			1U				10U	E	E	
trans-1,2-Dichloroethene	1U			0.93L	J	A		10U	E	ADE	

ANALYTICAL RESULTS

Page 2 of 4

Case No. : 11-BCCO-15.0 SDG No. : 01J254
 Site : Omega Chem OU-2
 Lab : EMAX
 Reviewer : Denise McCaffrey, ESAT/LDC
 Date : April 16, 2002

Tier3 Table 1A

QUALIFIED DATA
 Concentration in ug/L

Analysis Type : Water Samples for Volatiles by
 EPA Method 8260B

Station Description :	GW401-PP063-0059			GW401-PP064-0061			GW401-PP065-0069			GW401-PP066-0065			GW401-PP066-2002 TB			Method Blank MBLK1W			Method Blank MBLK2W		
Sample ID :	GW401-PP063-0059			GW401-PP064-0061			GW401-PP065-0069			GW401-PP066-0065			GW401-PP066-2002 TB			Method Blank MBLK1W			Method Blank MBLK2W		
Collection Date :	10/29/01			10/29/01			10/29/01			10/29/01			10/29/01			1			1		
Dilution Factor :	1			1			10			10			1			1			1		
Volatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Trichlorofluoromethane	1U			7.9			10U		E	19	J	DE	1U			1U			1U		
Vinyl Chloride	2U			2U			20U		E	20U		E	2U			2U			2U		
Acetone	10U			10U	J	C	100U	J	CE	100U		E	10U			10U			10U	J	C
2-Butanone	10U			10U			100U		E	100U		E	10U			10U			10U		
Carbon Disulfide	1U			1U			10U		E	10U		E	1U			1U			1U		
Toluene	1U	J	B	1U	J	B	10U	J	BE	10U	J	BE	0.28L	J	A	1U			0.36L	J	A
Trichloroethene	1.7			32			70		E	540		EF	1U			1U			1U		
Chlorodibromomethane	1U			1U			10U		E	10U		E	1U			1U			1U		
4-Chlorotoluene	1U			1U			10U		E	10U		E	1U			1U			1U		
Tetrachloroethene	5.9			45		F	86		E	850	J	EF	1U			1U			1U		
Freon 113	0.97L	J	A	13			10U		E	17	J	DE	1U			1U			1U		
Ethylbenzene	1U			1U			10U		E	10U		E	1U			1U			1U		
Hexachlorobutadiene	1U	J	C	1U	J	C	10U	J	CE	10U	J	CE	1U	J	C	1U	J	C	1U	J	C
Isopropylbenzene	1U			1U			10U		E	10U		E	1U			1U			1U		
p-Isopropyltoluene	1U			1U			2.3L	J	A	10U		E	1U			1U			1U		
Methylene Chloride	1U	J	B	1U			10U		E	10U	J	BE	0.54L	J	A	1U			1U		
Naphthalene	1U			1U			13		E	10U		E	1U			1U			1U		
n-Propylbenzene	1U			1U			10U		E	10U		E	1U			1U			1U		
Styrene	1U			1U			10U		E	10U		E	1U			1U			1U		
1,1,1,2-Tetrachloroethane	1U			1U			10U		E	10U		E	1U			1U			1U		
1,1,2,2-Tetrachloroethane	1U			1U			10U		E	10U		E	1U			1U			1U		
1,2,4-Trichlorobenzene	1U			1U			10U		E	10U		E	1U			1U			1U		
1,2,3-Trichlorobenzene	1U			1U			10U		E	10U		E	1U			1U			1U		
1,1,1-Trichloroethane	1U			1U			15		E	59		E	1U			1U			1U		
1,1,2-Trichloroethane	1U			1U			10U		E	10U		E	1U			1U			1U		
Methyl t-Butyl Ether	1U			0.27L	J	A	10U		E	10U		E	1U			1U			1U		
Dichlorofluoromethane	NA			NA			NA			NA			NA			NA			NA		

Val - Validity. Refer to Data Qualifiers in Table 1B.

Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL - Contract Required Quantitation Limit, N/A - Not Applicable, NA - Not Analyzed

Validated Results are presented in bold.

D1, D2, etc. - Field Duplicate Pairs

FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample

Case No. : 11-BCCO-15.0

SDG No. : 01J254

ANALYTICAL RESULTS

Tier 3 Table 1A

Site : Omega Chem OU-2

Lab : EMAX

Reviewer : Denise McCaffrey, ESAT/LDC

Date : April 16, 2002

QUALIFIED DATA

Concentration in ug/L

Analysis Type : Water Samples for Volatiles by

EPA Method 8260B

Station Description :																					
Sample ID :	CRQL																				
Collection Date :																					
Dilution Factor :																					
Volatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Trichlorofluoromethane	1																				
Vinyl Chloride	2																				
Acetone	10																				
2-Butanone	10																				
Carbon Disulfide	1																				
Toluene	1																				
Trichloroethene	1																				
Chlorodibromomethane	1																				
4-Chlorotoluene	1																				
Tetrachloroethene	1																				
Freon 113	1																				
Ethylbenzene	1																				
Hexachlorobutadiene	1																				
Isopropylbenzene	1																				
p-Isopropyltoluene	1																				
Methylene Chloride	1																				
Naphthalene	1																				
n-Propylbenzene	1																				
Styrene	1																				
1,1,1,2-Tetrachloroethane	1																				
1,1,1,2,2-Tetrachloroethane	1																				
1,2,4-Trichlorobenzene	1																				
1,2,3-Trichlorobenzene	1																				
1,1,1-Trichloroethane	1																				
1,1,2-Trichloroethane	1																				
Methyl t-Butyl Ether	1																				
Dichlorofluoromethane	NA																				

Val - Validity Refer to Data Qualifiers in Table 1B.

Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL - Contract Required Quantitation Limit, N/A - Not Applicable, NA - Not Analyzed

Validated Results are presented in bold.

D1, D2, etc. - Field Duplicate Pairs

FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample

TABLE 1B
DATA QUALIFIER DEFINITIONS FOR ORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared according to the document, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," February 1994.

- | | |
|----|---|
| U | The analyte was analyzed for but was not detected above the reported sample quantitation limit. |
| L | Indicates results which fall below the Contract Required Quantitation Limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |